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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,638	01/29/2002	Laurent Frelechoux	CH920000072US1	8327
7590	11/17/2005			
IBM CORPORATION INTELLECTUAL PROPERTY LAW DEPT. P.O. BOX 218 - 39-254 YORKTOWN HEIGHTS, NY 10598			EXAMINER DINH, DUNG C	
			ART UNIT 2152	PAPER NUMBER

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/059,638		<b>Applicant(s)</b> FRELECHOUX ET AL.	
	<b>Examiner</b> Dung Dinh		<b>Art Unit</b> 2153	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☐ Responsive to communication(s) filed on \_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-15 and 18-20 is/are rejected.

7) ☐ Claim(s) 16 and 17 is/are objected to.

8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 29 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All    b) ☐ Some \* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: ____
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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --*

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 1-6, 7, 11-15, 18-20 are rejected under 35**

**U.S.C. 102(a) as being anticipated by Lin et al. "A Clustering Technique for Large Multihop Mobile Wireless Networks".**

As per claim 1, Lin teaches a method essentially as claimed, comprising:

for each node maintaining cluster information dependent upon the size of the cluster [p.1545 col.1 2nd paragraph "routing table in each node", col.2 1st paragraph "... the sizes of the cluster may effect the storage and communication overhead of the routing protocol];

on connection of two of the nodes which are member of two respective clusters, transmitting cluster control information to each other [p.1546 col.2 section C "... existence of a new neighbor ... it sends its cluster information to the new

Art Unit: 2153

neighbor. Node i will also receive the cluster information from node j.],

determining whether a clustering condition, dependent on the cluster control information, is satisfied [p.1546 col.2 section C "both nodes i and j check whether one of the two clusters need to be dismissed],

if so communicating a clustering agreement to the other node (cluster dismissed); and

if the clustering condition of each of the two nodes is satisfied, each of the two nodes exchanges routing information and then merging the two cluster [p.1546 section C. "the node belongs to the dismissed cluster joins the other cluster. ... this node updates its cluster information and sends its new cluster information to all of its neighbor nodes."]

As per claim 2, Lin teaches the cluster control information is dependent upon the number of nodes in the cluster [apparent from p.1545 col.1 to col.2].

As per claims 3-4, it is inherent that the cluster information depends on the size of the ad hoc network that the cluster formed.

As per claim 5, it is apparent a node is a member of only one cluster at a time.

Art Unit: 2153

As per claim 7, Lin teaches a single node cluster (p.1546 col.2 1st paragraph).

As per claim 11, Lin teaches exchanging cluster information between the nodes. Hence, the cluster information is maintained in latter said node as claimed.

As per claim 12, it is inherent that communication occurs between the nodes to merge the clusters (p.1546 col.2 section C).

As per claim 13, it is inherent that the cluster control information is exchanged prior to activation of routing protocol because routing can't occur without knowing information about the cluster.

As per claim 14, Lin teaches the nodes sending cluster information to neighboring nodes. This encompasses a 'hello' message as claimed.

As per claim 15, it is inherent that the node exchanges cluster identifier as part of the cluster information in order for the node to recognize if they are in the same cluster (see p.1546 col.2 section C).

As per claims 18 and 20, they are device and computer program product corresponding to the method of claim 1. Hence, they are rejected under the same rationale as for claim 1 above.

Art Unit: 2153

As per claim 19, it is apparent that the clusters form a plurality of ad hoc networks.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. and further in view of applicant admitted prior art and Liu et al. "Mobile Cluster Protocol in Wireless Ad Hoc Network"

As per claims 6 and 9, Lin does not specifically disclose the cluster based routing protocol is PNNI or OSPF and IS-IS. These protocols are well known in the art (See applicant Background disclosure on page 1). It would have been obvious for one of ordinary skill in the art to use any of these routing protocols routing so as to conform to existing standards.

As per claim 8, Lin does not specifically disclose a node belonging to two clusters. In similar field of ad hoc network,

Art Unit: 2153

Liu discloses nodes can be member of two clusters so as to act as gateway for routing data between the clusters (p.569 section 2.3). Hence, it would have been obvious to permit a node to be member of plural clusters so as to provide a gateway for permitting traffics between the clusters. It is apparent that the node would have to have cluster information of each cluster of which it is a member.

As per claim 10, Liu teaches a single member cluster (p.1546 col.2 1st paragraph).

#### ***Allowable Subject Matter***

Claims 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Dinh whose telephone number is (571) 272-3943. The examiner can normally be reached on Monday-Friday from 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached at (571) 272-3949.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 2153

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Dung Dinh  
Primary Examiner  
November 9, 2005